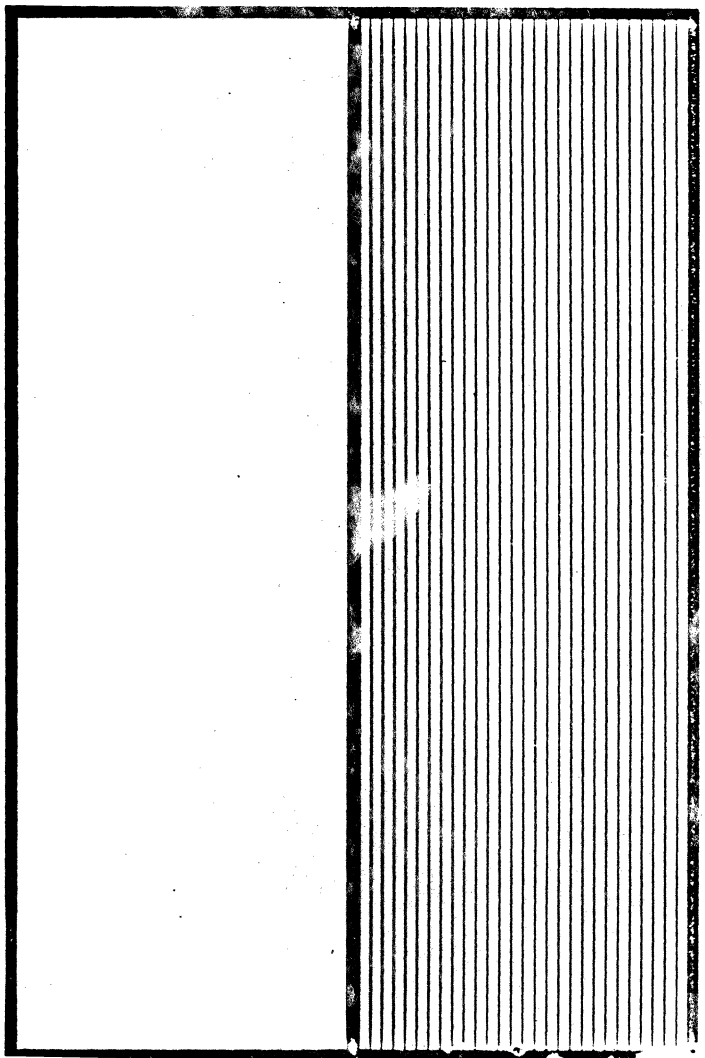
SPERRY RAND

4091719

UNIVAC 9400 SYSTEM

PROGRAM DESCRIPTION DRAWING



CUSTOMER ENGINEERING

SPERRY RAND UNIVAC

DRAWING NO. 4091719

REVISION -

CUSTOMER ENGINEERING
PRODUCT DIAGNOSTIC SOFTWARE

9400 - 5024/8424 or 8425 Disc Interchangeability and Compatibility Test D2170

	SIGNATURE	TITLE	DATE
APPROVAL			
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REVISION STATISTICS REC

DWG REV	MSTR REV	RELEASE DATE	DESIGNER NAME	E NUMBER	ECO NUMBER
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REVISION DESCRIPTION RECORD

REV	DESCRIPTION
-	Release to 9400 Test Library

4091779

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1. INTRODUCTION

1.1 Purpose. This document describes a 9400 Maintenance test program for the 5024/8424 of 25 Subsystem.

1.2 Major Objectives. The objective of this test program is to perform a test of the 5024/8424 or 25 Subsystem. Test organization and operator options are intended to satisfy the needs of Design, Quality Control and Field Engineering personnel in checkout, acceptance and maintenance activities.

1.3 Equipment Configurations. All equipment configurations must be connected to a Selector I-O channel of the 9400 Processor. This test will operate the following equipment configuration:

- Disc File Control - Type 5024
- Disc Drive - Type 8424 or 25
- Disc Pack Assembly - Type F12 14-01

1.4 Associated Software. This program has DSKH included as an integral part of the program. This is the standard disc handler routine used by all Disc Maintenance test programs. It is the interface between the program and MCR, which performs program load, parameterization, execution, deletion, I-O handling, and message handling.

1.5 Reference Documents

DRAWING	DESCRIPTION
S70040	UNIVAC 9400 Processor, Type 3019-00 and -01.
—	UNIVAC 9400 Dual I-O Selector Channel, Type XXXX-00 and -01.
P10076	Disc File Control, Type 5024. 8424 or 25
4091622	Maintenance Control Routine.
4091623	Parameter and Message Routines.
4091670	5024/8414 Disc Program Handler.

2. FUNCTIONAL DESCRIPTION

2.1 General Organization. This program is a test of the interchangeability and compatibility of various disc packs on the 5024/8424 or 25 Disc subsystem. It first tests the ability to perform minimum width reads at maximum noise level on a given disc pack using different disc handlers. Then a record length check is performed, and finally, a disc to disc copy can be tested.

2.2 Program Description

2.2.1 Test 1 (Group Test)

Objective - The objective of test 1 is to enable several other tests to be internally selected simply by entering the test. Test 1 selects test 2.

Method - The program places bits into the parameter location which tells DSKH which tests to enter.

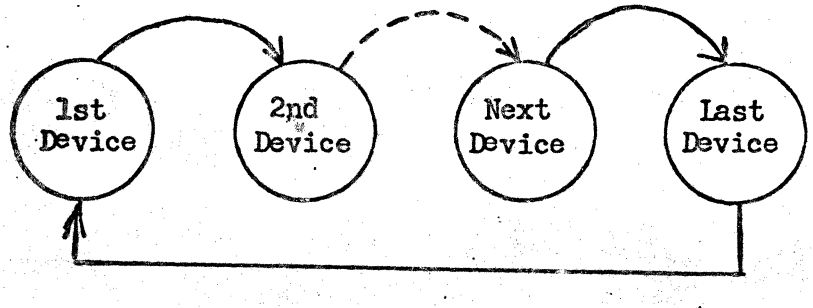
2.2.2 Test 2 (Minimum Width Read, Maximum Noise, and Record Length Check)

Objective - This test determines the following:

1. That records written under various worse case conditions can be read back on another disc handler.
2. That no data on the alternate primary tracks is destroyed by data written on the adjacent tracks.
3. That the count fields of records written on one device are not disturbed by rewriting the key-data portions on another device.

Method - The test performs the following sequence of operations:

1. All alternate primary tracks are written on the first device.
2. All adjacent tracks are written, read and verified on the first device.
3. All primary tracks are read and verified on the first device.
4. Steps 1 through 3 are repeated for all devices selected.
5. All discs selected are rotated as shown immediately below.



2.2.2 Test 2 (continued)

6. Interlaced adjacent tracks are rewritten on the first device.
7. All adjacent tracks are read and verified on the first device.
8. All primary tracks are read and verified on the first device.
9. Steps 6 through 8 are repeated for all devices selected.
10. Steps 5 through 9 are repeated until each disc has returned to its original device.

The data pattern used in this test is specified by the V6 parameter. Four 1600 byte records are written on the primary tracks and five long and short key and data records followed by an 800, a 1200, and a 1600 byte record are written on the adjacent tracks.

2.2.3 Test 3 (Copy Test)

Objective - This test copies the data from one disc onto another.

Method - The copy is performed record-by-record from a given area on one disc to the corresponding area on another disc. If the records are such that the copy cannot be performed, a message is printed, and the program is terminated.

3. OPERATING PROCEDURES

The disc handler routine DSKH is used as a standard interface between the program and MCR. All operating procedures described in the DSKH documentation hold equally well for this program.

3.1 Initialization. See DSKH documentation. The program is called by typing in the name.

3.2 Test Program Parameters

Option V17 - Bit Ø of the first byte in V17 must be set to perform copying in test 3. Bit 1 must be set to compare records in Test 3. If neither bit is set, test 3 will seek to each track in the test area. As V17 must have data entered in multiples of 4 hexadecimal bytes, fill out the remainder of the parameter with 3 hexadecimal bytes of 0.

Option V6 - It is suggested that "worst-case" conditions will be generated if V6 is set to V6/E5E5/E5E5 for test 2.

Options V15 and V16 - Tests 2 and 3 will be performed from the lower limit in V15 to the upper limit in V16.

For information on setting all other parameters, see DSKH documentation.

3.3 Test Program Messages. The DSKH documentation describes all test entry and exit messages and a standard I-O error message. Data errors and disabiling errors are detected by the program, and all such messages are contained in the program. Register 9 is used to jump to the various error routines, so its contents are printed with most error messages.

3.3.1 Test 1 - A simple parameter setting is performed here, so no errors can occur.

3.3.2 Test 2 - The following messages are typed out in this test:

```
ALL PRI TRACKS WRITTEN ON PACK XX
ALL ADJ TRACKS WRITTEN AND VERIFIED
ALL PRI TRACKS VERIFIED
ROTATE DISC PACKS ON ALL DVC'S - REPLY R2
ALT ADJ TRACKS RE-WRITTEN ON PACK XX BY DVC YY
ALL ADJ TRACKS VERIFIED
ALL PRI TRACKS VERIFIED
HOME ADDRESS ERROR - PACK XX DVC YY
     WANTED CYL 22 HD ZZ FOUND CYL ZZ HD ZZ
DATA COMPARE ERROR - PACK XX DVC YY
     (ADJ) CYL ZZ HD ZZ
DVC YY CANNOT READ THIS PACK
     REPLY:  R3 - RETRY DVC; R2 - SKIP DVC
```